ABSTRACT

Thin film perpendicular magnetic head with a narrow main pole capable of a high recording density in excess of 100 gigabits per square inch and generating a high magnetic recording field exceeding 10 kOe (oersted), while also modified to suppress remanent magnetic fields occurring immediately after writing operation. In a perpendicular magnetic head comprising a main pole, a return path for supplying a magnetic flux to that main pole, and an conductive coil for excitation of the main pole and return path, the main pole has a pole width of 200 nanometers or less, and a magnetic multilayer made up of a high saturation flux density layer and low saturation flux density layer, the low saturation flux density layer has a thickness within 0.5 to 5 nanometers, the high saturation flux density layer has a thickness from 10 to 50 nanometers for suppressing remanent magnetization and preventing erasing after writing by utilizing a closed magnetic domain structure in the pole.